

**What is claimed is:**

1. A method for obtaining a liquid sample having a decreased cellular or particulate concentration for optical examination comprising:

a) providing an apparatus comprising:

a sample chamber comprising

two containment walls, at least one of them being transparent for optical examination;

at least one wall for holding said containment walls at a distance, and enclosing an interior space;

a separation wall comprising at least a first separation channel and a second separation channel, wherein the interior space of said sample chamber is divided into a first compartment and a second compartment by said separation wall;

a sample entrance into the first compartment; and

a means for venting the sample chamber during filling;

b) depositing a liquid sample into the sample entrance of said sample chamber;

c) allowing the sample to flow from the sample entrance into the first compartment;

d) allowing the sample to advance to the separation wall and the separation channels therein;

e) allowing the sample to advance through the separation wall and the first and second separation channels;

f) allowing the sample to continue to advance until it reaches and stops at the end of the sample chamber; and

g) obtaining a liquid sample having decreased cellular or particulate concentration.

2. The method according to Claim 1 wherein said liquid sample is blood.

3. The method according to Claim 1 wherein said apparatus further  
5 comprises a moat surrounding the sample chamber.

4. The method according to Claim 3 wherein said moat further comprises  
at least one capillary stop to prevent uncontrolled flow.

10 5. The method according to Claim 3 wherein said liquid sample is blood.

6. The method according to Claim 1 wherein said first separation channel  
is about 3 to 10  $\mu\text{m}$  deep by 5 to 50  $\mu\text{m}$  wide.

15 7. The method according to Claim 1 wherein said second separation  
channel is about 0.5 to 1.5  $\mu\text{m}$  deep by 50 to 1000  $\mu\text{m}$  wide.

8. The method according to Claim 3 wherein said first separation channel  
is about 3 to 10  $\mu\text{m}$  deep by 5 to 50  $\mu\text{m}$  wide.

20 9. The method according to Claim 3 wherein said second separation  
channel is about 0.5 to 1.5  $\mu\text{m}$  deep by 50 to 1000  $\mu\text{m}$  wide.

10. The method according to Claim 1 wherein said apparatus further  
25 comprises a plurality of notches in the interior space of the sample chamber.

11. The method according to Claim 3 wherein said apparatus further comprises a plurality of notches in the interior space of the sample chamber.

12. The method according to Claim 1 wherein said apparatus further  
5 comprises a plurality of notches in the first compartment of the sample chamber.

13. The method according to Claim 3 wherein said apparatus further comprises a plurality of notches in the first compartment of the sample chamber.

10 14. The method according to Claim 10 further comprising after step (c), allowing the sample to flow past each notch in the first compartment; and after step (e), allowing the sample to flow past each notch in the second compartment.

15 15. The method according to Claim 11 further comprising after step (c), allowing the sample to flow past each notch in the first compartment; and after step (e), allowing the sample to flow past each notch in the second compartment.

16. The method according to Claim 12 further comprising after step (c), allowing the sample to flow past each notch in the first compartment.

20

17. The method according to Claim 13 further comprising after step (c), allowing the sample to flow past each notch in the first compartment.

18. The method of Claim 1 wherein said second compartment has an  
25 internal volume which is smaller than the internal volume of said first compartment.

19. The method of Claim 1 wherein said second compartment has a thickness of from about 1 to 7  $\mu\text{m}$ .

Sub  
A2  
20. The method of Claim 1 wherein said first compartment has a thickness  
5 of from about 10 to 50  $\mu\text{m}$ .

21. The method of Claim 3 wherein said second compartment has an internal volume which is smaller than the internal volume of said first compartment.

Sub  
A3  
10 22. The method of Claim 3 wherein said second compartment has a thickness of from about 1 to 7  $\mu\text{m}$ .

23. The method of Claim 3 wherein said first compartment has a thickness  
of from about 10 to 50  $\mu\text{m}$ .

15